CONTROL OF INFECTIONS AND CONSTRUCTION

1. **PURPOSE**: To describe measures for the identification and protection of "at risk" patients, control of exposure, and to prevent the spread of infection(s) before, during and after construction, demolition, renovation, and repair projects at the Cheyenne VA Medical Center (VAMC).

2. **POLICY**: The following procedures represent the minimum standard procedures required to safeguard the health and well-being of all healthcare workers, patients, Community Living Center residents, and visitors in Cheyenne VAMC facilities. The Infection Preventionist shall be invited to attend all architectural construction planning sessions and construction progress meetings and will guide the designers and contractors in adherence to these procedures and regulatory requirements. Adherence to this Policy Memorandum will enable the Infection Preventionist to be proactively aware of projects and to anticipate infection control needs.

3. **PROCEDURES**:

   a. Infection Control Risk Assessment:

   (1) Construction and remodeling are defined as activities that disturb the environment and where settled dust or dirt is found which may cause spores to become airborne. This includes demolition of existing ceilings or walls; exposure of ceiling spaces by removal of all or part of a ceiling; breeching of walls, ceilings, or floors; removal of uncovered debris from construction areas; and major disturbance of soil in which dust or dirt may become airborne.

   (2) Definitions of Construction Activities: Construction activity types are defined by the amount of dust generated, the duration of the activity, and the amount of shared HVAC systems. Contact the Facility Management Services and the Infection Preventionist if any activity is questionable under these guidelines.

Type A Inspection Non-Invasive, minimal amount of dust, fumes, odors, noise, or vibration	**Type B** Small Scale Short Duration, moderate amount of duct, fumes, odors, noise, vibration	**Type C** Major/High Dust Demolition/removal of fixed building components or assemblies
Includes, but is not limited to: • removal of ceiling tiles for visual inspection only, e.g., limited to 1 tile per 50 square. feet. • painting (but not sanding)	Includes, but is not limited to: • installation of telephone and computer cabling • access to chase spaces • cutting of walls or ceiling where dust migration can be controlled	Includes, but is not limited to: • sanding of walls for painting or wall covering • removal of floor coverings, ceiling tiles and casework • new wall construction

• wall covering, electrical trim work, minor plumbing, and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection		• minor duct work or electrical work above ceilings • major cabling activities any activity which cannot be completed within a single work shift

(3) Definitions of Patient Risk Groups:

Low Risk	Moderate Risk	High Risk
Unoccupied/fully sealed area	Computer/switch room	ICU
Boiler/chiller plant/storage/shops	On call sleeping rooms	Operating Room Suite, PACU
Office areas	Physical Therapy & Rehab	Pharmacy
Classrooms	Services	SPS
Meeting Rooms	Primary Care Teams	Emergency Department
Atrium	Eye Clinic	Logistics/Primary Storage
Elevators	Canteen, Kitchen, Vending	Laboratory
Warehouse	Area	Acute Med Surg
CLC Laundry Area in basement	Outpatient Mental Health	Cardiopulmonary
Chapel	Audiology	Immuno-compromised patient
Police	Pharmacy	room or Negative Isolation
Prosthetics		CLC
Canteen Store		Specialty Clinics
Morgue		Dental Clinic
Outbuildings		ENT Clinic
Non-Patient Areas		Diabetic Clinic
Computer/switch room		Nuclear Medicine
		Radiology/CT/MRI
		Endoscopy
		Laundry/Linen Area

(4) Infection Control Matrix: Class of Project determines the work type and the risk group for the construction project (refer to the table below). Follow the corresponding precautions for the Risk Class the project falls into.

Risk Level	Type A	Type B	Type C
Low Risk	I	II	II
Moderate Risk	I	II	III
High Risk	II	III	III

b. Performance Requirements:

(1) The most effective means of minimizing or eliminating the potential for infection is to control ventilation and dust transmission from construction areas to those areas occupied and used for patient care activities.

(2) A copy of the Cheyenne VAMC Construction Specifications document as well as a copy of this Policy Memorandum shall be provided to all contractors prior to submittal of bids and proposals. Cheyenne VAMC requires any contractor, subcontractor, materials supplier, vendor, VA employee, or agent to be bound by these same requirements. Before any construction on site begins, the Contractor's on-site management team shall attend a mandatory meeting held by the Cheyenne VAMC's Facilities Management personnel for instruction on precautions to be taken.

(3) The Cheyenne VAMC facility Safety and/or Infection Preventionist reserve the right to modify performance requirements for certain activities. Any modifications made by Cheyenne VAMC personnel will be documented on the Infection Control Risk Assessment (ICRA) and a copy provided to the contractor for posting in the construction area.

(4) Contamination: Airborne contaminant control is required in all hospital areas. Contamination activities are listed in the previously defined Construction Activity Types B and C (refer to Table 1, Type of Construction Project Activity). The contractor shall limit dissemination of airborne contaminants produced by construction-related activities, including dust, chalk, powders, aerosols, fumes, fibers and other similar materials into patient, staff, diagnostic operations, sensitive procedures or medical equipment areas. When required by the above risk classification, HEPA equipped air filtration machines shall provide airflow into construction area not less than 100 FPM (feet per minute) at barricade entrances with doors fully open. HEPA equipped air filtration machines shall be connected to normal power gauge to a single switch for emergency shutoff and shall run continuously. Proper air pressure will be monitored on a daily basis. Cheyenne VAMC Infection Prevention or Safety personnel may perform baseline and periodic air sampling during construction to monitor effectiveness of containment procedures.

(a) Vent devices to outside by removing existing windows and replacing them with plywood panels fitted for the exhaust hose.

(b) HEPA filters shall be changed as frequently as necessary for duration of work to maintain proper filtration.

(5) Barriers and Containment: Containment areas may include areas of construction, adjacent staging areas/passage areas for workers, supplies, and waste and ceiling spaces above and adjacent to the construction area. It may also be necessary to further protect areas connected to the construction area by mechanical systems, air intake, exhaust and

ductwork. The contractor shall submit a description of temporary barriers and procedures to be used to achieve and maintain control of the construction-related airborne contaminates.

(a) A closed door with impervious tape applied over the frame and door joint is acceptable for projects that can be contained and fall into a Risk Class I, II, or III.

(b) Construction, demolition or reconstruction projects that are not able to be contained within a single room must have the following barriers erected. All barriers must be fire retardant.

a. Provide dust-tight polyethylene covering sealed at the edges with impervious tape. Seal the barrier with impervious tape at wall seams, cracks around windows and doorframes, exhaust system ductwork, pipes, joints, etc.

b. Whenever openings are made into walls or ceilings in a Risk Class III or IV projects, provide portable enclosures, enclosing the ladder and sealing off the opening with a minimum of two foot flap overlap, fitted tightly to the ceiling and taped to the floor and ceiling. Extend barriers above ceiling as required to contain airborne contaminant.

(c) Interior construction activities causing disturbance of existing dust must be conducted in tight enclosures eliminating flow of particulate matter into patient areas. Ceilings and walls in patient care areas must be secure at all times. Spray surfaces with water during dust-producing demolition activities. Hard surface floors in work areas, adjacent hallways and passage areas, and adjacent carpeted areas require cleanup with HEPA-filtered vacuum cleaners. Hard floors require frequent wet mopping during demolition and construction. Protect adjacent carpeted areas with plastic and plywood.

(d) When exterior demolition is being done, water shall be applied whenever practical to settle and hold dust to a minimum, with special attention given during demolition and moving of materials. No chemical agent shall be used without consent of the Cheyenne VAMC representative.

(e) The contractor, at barrier/barricade entrances and exits, shall provide adhesive walk-off mats, with a minimum size of 24 x 36 inches. The mats shall be changed as necessary, but not less than daily. Any dust tracked outside of the barrier shall be removed immediately either by HEPA-filtered vacuum or wet mopping.

(6) Enforcement: Failure to maintain containment will result in the issuance of a warning. If the situation is not corrected within eight (8) hours of warning, Cheyenne VAMC will have cause to stop work as provided in the General Conditions of the Contract for Construction. Infection Control or Safety personnel will document each violation and

maintain a log of all violations. Costs incurred by the Cheyenne VAMC due to the delay may result in a deduction of those costs from the contract and may affect the ability of the contractor to bid for future work.

(7) Infection Control Permit: An Infection Control Permit is required for Class II or higher procedures and any activity in a High Risk Group. Refer to the shaded area on the Construction Activity / Infection Control Matrix.

4. RESPONSIBILITIES:

a. COR, Chief of Facilities Management and the Infection Preventionist will be responsible for development of an infection control risk assessment during the design phase, prior to any issuing of a contract that is anticipated to impact the control of infections.

5. REFERENCES:

a. The Joint Commission current standards. http://www.jointcommission.org/

b. Bartley JM, Olmsted, R. Construction & Renovation: A Toolkit for Professionals in Infection Prevention and Control, 3rd Edition. APIC, 2007.

c. 2006 Guidelines for Design and Construction of Health Care Facilities. AIA.

6. RESCISSION: None.

7. ATTACHMENT:

Appendix A – ICRA Form

8. EXPIRATION DATE: May 2016

//ES//Original Signature on File
CYNTHIA MCCORMACK
Medical Center Director

CHEYENNE VA MEDICAL CENTER

INFECTION CONTROL RISK ASSESSMENT FORM (ICRA)

COR is to complete this Risk Assessment WITH the Infection Preventionist (IP)
(NOTE: The IP is to be notified PRIOR to any work commencing in a Public Area)

Project Title & #:
COR (Name & Phone#):
☐ **Main Building** **(Bldg/Floor/ Wing):** ☐ **Out Buildings** ☐ **MSOC** **Type Area:** ☐ **Health Care** ☐ **Outpatient** ☐ **CLC** ☐ **Business** ☐ **Vacant** ☐ **Outside**

Infection Preventionist: Check ALL that Apply

☐ Generates a **MINIMAL** Amount of Dust, Fumes/Odors, Noise, Or Vibration: painting, wall covering ,electrical trim work, minor plumbing, removal of one ceiling tile per 50 square feet for visual inspection only **(TYPE A)**
☐ Generates A **MODERATE** Amount of Dust, Fumes/Odors, Noise, Or Vibration : installation of cabling, access to chase spaces, cutting walls or ceiling where dust migration can be controlled **(TYPE B)**
☐ Generates A **MAJOR** Amount of Dust, Fumes/Odors, Noise, Or Vibration: sanding, removal of floor coverings, ceiling tiles or casework, new wall construction, duct work or electrical work above ceilings, major cabling activities **(TYPE C)**

Will Affect One Or More LOW RISK AREAS	☐ Unoccupied & Fully Sealed Area ☐ Non Public Access Area ☐ Lobby/Hallway/Public Assembly Area	☐ Boiler/Chiller Plant /Storage or Shops ☐ Non-Patient Areas ☐ Office Areas
Will Affect One Or More MODERATE RISK AREAS	☐ Computer/Switch Room ☐ Outpatient Mental Health ☐ Canteen, Kitchen Vending	☐ Physical Therapy ☐ On-Call Sleeping Rooms ☐ Outpatient Clinics
Will Affect One Or More HIGH RISK AREAS	☐ Intensive Care Unit ☐ Acute Medical Surgical Unit ☐ Operating Rooms ☐ Radiology / MRI / CT Scan ☐ Respiratory Therapy ☐ Emergency Department ☐ Endoscopy ☐ Laboratory ☐ Dental Clinic ☐ Logistics Primary Storage	☐ Pharmacy ☐ SPS ☐ Immuno-Compromised Pt's or Negative Isolation ☐ CLC ☐ Surg/Recovery/Inpatient Units ☐ Nuclear Medicine ☐ Laboratory ☐ Specialty Clinics including ENT ☐ Chemo / Infusion Clinic ☐ Linen Room

TYPE PROJECT	*A*	*B*	*C*
LOW Risk Area:	N/A	II	II
MODERATE Risk Area:	I	II	III
HIGH Risk Area:	II	III	III

I/C MEASURES: ☐ **Not Applicable** **CLASS** ☐ **I** ☐ **II** ☐ **III**

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INFECTION CONTROL MEASURES FOR ALL PROJECTS: (Infection Preventionist: Check ALL that Apply)

- ☐ ENVIRONMENTAL MANAGEMENT SERVICES (EMS) STAFF ENSURES REMOVAL of any MEDICAL WASTE, including sharps containers prior to the start of the projects. If contract workers find any needles, syringes, sharp medical objects, they will notify Infection Preventionist IMMEDIATELY (Ext. 7091)…
- ☐ Informed the Project Coordinator (COR) that CONTRACTORS CLOTHING MUST BE FREE OF LOOSE SOIL AND DEBRIS WHEN EXITING The Construction Area…
- ☐ The Construction Areas MUST be kept SEPARATED FROM PATIENT CARE AREAS BY BARRIERS THAT KEEP THE DUST AND DIRT INSIDE THE WORKSITE. The barriers must provide a complete seal of the construction area from adjacent areas (walls may be rigid or 4 or 6 mil thickness plastic) / Informed the Project Coordinator (COR) that Barriers Are Not To Be Removed From Work Area Until Completed Project Is Inspected By Infection Control & Thoroughly Cleaned By EMS Staff…
- ☐ "Sticky" DUST MATS WILL BE INSTALLED At All Construction Entrances & Exits To Reduce Dust…
- ☐ Negative Pressure Exhaust Will Be in Place, Unused Doors Sealed With Duct Tape, Air Supply/Exhaust Vents Are To Be Sealed…
- ☐ Contractors To THOROUGHLY SWEEP & MOP CONSTRUCTION & ENTRANCE/EXIT AREAS EVERY 4 HOURS, & EMS Notified To Clean Surrounding Area More Frequently / Area Is Broom Cleaned At End Of The Day / No Trash Is Left On Site (To Prevent Vermin) Demolition debris is removed in tightly fitted covered carts which were damp wiped to remove dust/ Use specified traffic patterns…
- ☐ If Demolition Chutes are used, they must be sealed when not in use / The chute and damper should be sprayed with water, as necessary to maintain dust control…
- ☐ Control, collection and disposal must be provided for any DRAIN LIQUID OR SLUDGE FOUND when demolishing plumbing…
- ☐ Use DESIGNATED ENTRY AND EXIT PROCEDURES / Keep all egress pathways free of debris / Use designated elevators only…
- ☐ NO UNAUTHORIZED PERSONNEL should be allowed to enter construction areas…

COR is to contact the Infection Preventionist immediately if any of the above conditions change…

MEASURES FOR CLASS II PROJECTS: Above Measures PLUS (Infection Preventionist: Check ALL that Apply)

- ☐ WATER MISTING OF WORK SURFACES To Control Dust While Cutting…
- ☐ EXHAUST FAN WITH HEPA FILTER Is In Place To Prevent Airborne Dust From Dispersing Into Atmosphere (Negative Air Pressure Maintained) / HVAC System In Area Is Removed Or Isolated To Prevent Contamination Of Duct System…
- ☐ All PERSONNEL EXITING WORK SITE Are Required To Wear Shoe Covers Which Must Be Changed Each Time The Worker Exits The Work Area Or Provide Equivalent Method Of Removing Dust From Shoes & Clothes...
- ☐ CONTROL CUBE METHOD (Cart With Plastic Covering And Sealed In Work Site For HEPA Vacuum To Vacuum Workers Prior To Exiting)…
- ☐ WINDOW SEALS are to be used to reduce the amount of outside excavation debris coming into the building…

MEASURES FOR CLASS III PROJECTS (Above Measures PLUS – Infection Preventionist Check ALL that Apply):

- ☐ ANTEROOM IN PLACE, And All Personnel Pass Through So They Can Be Vacuumed Using A HEPA Vacuum Cleaner Before Leaving Work Site OR Wear Jumpsuits That Are Removed Each Time They Leave The Work Site…

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UPON COMPLETION OF ALL PROJECTS: (Infection Preventionist: Check ALL that Apply):

- ☐ Wipe Work Surfaces With Disinfectant…
- ☐ Wet Mop Entire Area…
- ☐ Remove Isolation Of HVAC System In Areas Where Work Is Being Performed…
- ☐ Remove Barrier Materials Carefully To Minimize Spreading Of Dirt And Debris Associated With Construction…

UPON COMPLETION OF CLASS II & III CONSTRUCTION
Above Measures PLUS (Infection Preventionist: Check ALL that Apply):

- ☐ WIPE WORK SURFACES With Disinfectant…
- ☐ VACUUM with HEPA Filtered Vacuum…
- ☐ WET MOP AREA with disinfectant…
- ☐ REMOVE ISOLATION Of HVAC System In Areas Where Work Is Being Performed…
- ☐ AFTER IP Staff has Inspected area, and Issued the All Clear REMOVE BARRIER MATERIALS CAREFULLY To Minimize Spreading Of Dirt And Debris Associated With Construction…

Infection Preventionist Comments (Attach Additional Pages, Or E-Mails As Necessary):

1. Identify specific site of activity.
2. Identify issues related to ventilation, plumbing, and electrical in terms of the occurrence of probable Outages.
3. Consider potential risk of water damage. Is there a risk due to compromising structural integrity?
4. Work hours: can or will the work be done during non-patient care hours?

☐Yes ☐No ☐ NA Infection Control Permit will be required to be posted at job site entrance.

For new construction:

☐Yes ☐No ☐ NA Do plans allow for adequate number of isolation/negative airflow rooms?

☐ Yes☐No ☐ NA Do the plans allow for the required number and type of handwashing sinks (verify against AIA guidelines for types and area)?

☐ Yes☐ No ☐ NA Does the IP agree with the plans relative to clean and soiled utility rooms?

Infection Preventionist (Print & Initials)	Date:
COR (Print & Initials)	Date: